CLAIMS

What is claimed is:

1. A process for the microbacterial production of amino acids, wherein the export carrier activity and the export gene-expression of a microorganism producing the respective amino acid is increased.

2. A process according to claim 1, wherein the endogenous export carrier activity of the microorganism is increased.

3. A process according to claim 2, wherein, by mutation of the endogenous export gene, a carrier with higher export activity is generated.

4. A process according to one of the claims 1 to 3, wherein the gene expression of the export carrier is increased by increasing the number of gene copies.

5. A process according to claim 4, wherein, in order to increase the number of copies, the export gene is installed in a gene construct.

6. A process according to claim 5, wherein the export gene is installed in a vector with a low number of copies.

7. A process according to claim 5 or 6, wherein the export gene is installed in a gene construct which includes regulatory gene sequences assigned to the export gene.

8. A process according to claim 7, wherein the regulatory gene sequence includes a nucleotide sequence coding for the amino acid sequence as given in SEQ ID No.(B)3 and in table 1 and the allele variations thereof.

~~9. A process according to claim 8, wherein the regulatory~~

gene sequence includes one of a nucleotide sequence of nucleotide 1421 to 2293 according to SEQ ID NO.(B)1 and table 2 and a DNA sequence effective essentially in the same way.

10. A process according one of the claims 5 to 9, wherein a microorganism producing the respective amino acid is transformed with the gene construct including the export gene.

11. A process according to claim 10, wherein a microorganism of the type Corynebacterium is transformed with the gene construct including the export gene.

12. A process according to claim 10 or 11, wherein, for the transformation, a microorganism is utilized in which the enzymes which participate in the synthesis of the corresponding amino acids are deregulated.

13. A process according to one of claims 10 to 12, wherein, for the transformation, a microorganism is utilized which contains an increased part of the central metabolism metabolites.

14. A process according to one of claims 4 to 13, wherein the export gene is isolated from a microorganism strain of the type Corynebacterium.

15. A process according to one of claims 1 to 14, wherein the export gene sequence is identified by comparison with the sequence of an already known export gene.

16. A process according to claim 15, wherein the amino acid sequence derived from the export gene sequence to be identified is compared with the amino acid sequence given in SEQ ID No. (A)2 and in table 3 or the allele variation thereof.

17. A process according to one of claims 1 to 16, wherein the export gene expression is increased by amplifying the transcription signals.

18. A process according to one of the 1 to 17, wherein as export gene, a gene with a nucleotide sequence coding for the amino acid sequence given in SEQ ID No.(A)2 and in table 3 and

the allele variations thereof is utilized.

19. A process according to claim 18, wherein as export gene, one of the genes with the nucleotide sequence of nucleotide 1016 to 1726 according to SEQ ID No.(A)1 and table 2 and a DNA sequence with essentially the same effects is utilized.

20. A process according to one of the preceding claims 1 to 19 for the manufacture of L-lysine.

21. An export gene coding for an amino acid export carrier.

22. An export gene according to claim 21 with a nucleotide sequence coding for an amino sequence given in SEQ ID No.(A)2 and table 3 or the allele variation thereof.

23. An export gene according to claim 22 with the nucleotide sequence of nucleotide 1016 to 1726 according to SEQ ID No.(A)1 and table 2 or a DNA sequence with essentially the same effects.

24. An export gene according to one of claims 21 to 23 with regulatory gene sequences assigned thereto.

25. An export gene according to claim 24, wherein the regulating gene sequence includes a nucleotide sequence coding for the amino sequence given in SEQ ID No.(B)3 and table 1 and the allele variations thereof.

26. An export gene according to claim 25, wherein said regulating gene sequence includes a nucleotide sequence of nucleotide 1421 to 2293 according to SEQ ID No.(B)1 and table 2 or a DNA sequence effective essentially in the same way.

27. A regulator gene suitable for the regulation of an export gene coding for an amino acid and export carrier, including a nucleotide sequence coding for the amino sequence given in SEQ ID No.(B03 and table 1 and the allele variations thereof.

28. A regulator gene according to claim 27, with the nucleotide sequence of nucleotide 1421 to 2293 according to SEQ ID No.(B)1 and table 2 or a DNA sequence effective essentially in the same way.

29. A gene structure containing an export gene according to one of claims 21 to 24.

30. A gene structure including a regulatory gene sequence according to claim 27 or 28.

31. A vector including an export gene according to one of claims 21 to 26 or a gene structure according to claim 29.

32. A vector according to claim 31 with a low number of copies.

33. A vector including a regulatory gene sequence according to claim 27 or 28 or a gene structure according to claim 30.

34. A transformed cell including, in a replicable form, an export gene according to one of the claims 21 to 26 or a gene structure according to claim 29.

35. A transformed cell according to claim 34 including a vector according to claim 31 or 32.

36. A transformed cell according to claim 34 or 35, wherein said cell belongs to the type Corynebacterium.

37. A transformed cell according to one of claims 34 to 36, wherein in this cell the enzymes of the amino acid, which participate in the synthesis, are deregulated and wherein the amino acid is removed from the cell by way of the export carrier for which the export gene, which was transferred into the transformed cell, codes.

38. A transformed cell according to one of claims 34 to 37, wherein the cell includes an increased proportion of central metabolism metabolites.

39. A transformed cell including, in replicable form, a regulatory gene sequence according to claim 27 or 28 or a gene structure according to claim 30.

40. A transformed cell according to claim 39, including a vector according to claim 33.

41. A membrane protein with 6 transmembrane helices suitable

for the export of amino acids.

42. A membrane protein according to claim 41, including the amino acid sequence given in SEQ ID No.(A)2 and in table 3 wherein table 3 is part of this claim.

43. The use of an export gene for increasing the amino acid production of microorganisms.

44. The use according to claim 43, wherein a mutated export gene, which codes for an enzyme with increased export carrier activity is utilized.

45. The use according to claim 43 or 44, wherein the amino acid producing microorganism is transformed with a gene construct which includes an export gene.

46. The use according to claim 45, wherein the gene construct additionally carries regulatory gene sequences.

47. The use according to one of the claims 43 to 46, wherein an export gene from Corynebacterium is utilized.

48. The use according to one of claims 43 to 47, wherein Corynebacterium is used as amino acid producing microorganism.